



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,023	03/02/2004	Michel Strebelle	P06745US02/BAS	9734
881 7590 04/29/2008 STITES & HARBISON PLLC 1199 NORTH FAIRFAX STREET SUITE 900 ALEXANDRIA, VA 22314				
EXAMINER				
PATEL, DEVANG R				
ART UNIT		PAPER NUMBER		
1793				
MAIL DATE		DELIVERY MODE		
04/29/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/790,023

**Applicant(s)**

STREBELLE ET AL.

**Examiner**

DEVANG PATEL

**Art Unit**

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SI/02)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Priority*

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Belgium on 11/27/97. It is noted, however, that applicant has not filed a certified copy of the 09700962 application as required by 35 U.S.C. 119(b).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

Art Unit: 1793

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. **Claims 1-3, 5-7 and 9-14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Grosch et al. (DE 19623611, machine translation) and in view of Sepulveda et al. (US 4613427).

- a. **Regarding claim 1**, Grosch et al. (hereafter Grosch) discloses a process for preparation of epoxides comprising reacting an olefinic with a peroxide in the presence of an epoxidation catalyst [abstract, page 1] obtained by the steps of:
- i. blending a mixture including a titanium zeolite powder, water, binder, molding assistant such as methyl cellulose acts as a plasticizer and as a pore-forming substance [examples]. Methyl cellulose is a pore-forming substance as taught by Sepulveda et al. (hereafter Sepulveda). Sepulveda (drawn to catalyst preparation from clays for treatment of heavy crudes) discloses mixing a pore-forming substance selected from carbon, wood powder, polyethylene glycol, cellulose, methylcellulose, or melamine, in a quantity of 5-40 wt%, in order to produce the optimum pore volume [col. 4, lines 15-25]. It would have been obvious to a person of ordinary skill in the art to include a pore-forming substance of Sepulveda in the blending mixture of Grosch in order to produce an optimum pore volume, thus improving the catalytic activity;
  - ii. shaping the paste obtained in step i by extrusion [page 1];

- iii. drying in order to remove at least some of water and calcining to remove at least some of the organic residues, and obtaining extruded granules [page 1].
- b. **As to claim 2**, Grosch discloses the titanium zeolite having a crystalline structure of the ZSM-5, 11 type, wherein there is 10 wt% binder chosen from silicon derivative and converted into catalyst matrix [page 2].
- c. **As to claim 3**, the titanium zeolite having an IR absorption at about 960  $\text{cm}^{-1}$  [example 1].
- d. **As to claim 5**, Grosch discloses cylindrical extruded granules with 2 mm diameter and length of 1-8 mm [examples].
- e. **As to claim 6**, the catalyst contains 1-99 wt% titanium zeolite.
- f. **As to claims 7 and 11**, methyl cellulose (plasticizer) is a polysaccharide and binder includes siloxane derivative.
- g. **As to claim 9**, the amount of methyl cellulose is between 1-10 wt% [examples].
- h. **As to claims 10 and 12-13**, Sepulveda discloses the pore-forming substance (methyl cellulose or melamine) in an amount from 5-40 wt%, preferably between 8-30 wt% [col. 4, line 24]. This range meets the claimed amount of 6-14 wt%. It would have been obvious to a person of ordinary skill in the art to provide a pore-forming substance of Sepulveda in the catalyst preparation of Grosch because doing so results in an optimal pore volume and hence, improves the catalytic activity.

- i. **Regarding claim 14**, Grosch discloses a process for preparation of propylene oxide (i.e. 1,2 epoxypropane) comprising reacting propen (i.e. propylene) with hydrogen peroxide in the presence of an epoxidation catalyst [page 2] obtained by the steps of:
  - iv. blending a mixture including a titanium zeolite powder, water, binder, molding assistant such as methyl cellulose acts as a plasticizer and as a pore-forming substance [examples]. Methyl cellulose is in fact a pore-forming substance as taught by Sepulveda et al. (hereafter Sepulveda). Sepulveda (drawn to catalyst preparation from clays for treatment of heavy crudes) discloses mixing a pore-forming substance selected from carbon, wood powder, polyethylene glycol, cellulose, methylcellulose, or melamine in order to produce the optimum pore volume in a quantity of 5-40 wt% [col. 4, lines 15-25].
  - v. shaping the paste obtained in step i by extrusion [page 1];
  - vi. drying in order to remove at least some of water and calcining to remove at least some of the organic residues, and obtaining extruded granules [page 1].
- 5. **Claims 4 and 8** are rejected under 35 U.S.C. 103(a) as being unpatentable over Grosch et al. (DE 19623611) in view of Sepulveda et al. (US 4613427) as applied to claim 1 above, and further in view of Balducci et al. (US 5965476).
  - j. **Regarding claim 4**, Grosch does not explicitly disclose the claimed formula. However, Balducci et al. (drawn to silica/zeolite composite preparation

process) discloses titanium-silicalites catalysts satisfying the general formula  $x\text{TiO}_2(1-x)\text{SiO}_2$ , with  $x$  varying from 0.0005-0.04. It would have been obvious to a person of ordinary skill in the art to use titanium silicalites having the claimed formula because they provide a particular selectivity in epoxidation reactions of olefins [col. 1, lines 13-18].

k. **Regarding claim 8**, Grosch discloses the powder having 60 mesh particle size distribution, but this is much larger than 10 micron. Balducci et al. is drawn to silica/zeolite composite preparation process and discloses that such materials have particular selectivity in epoxidation reactions of olefins as stated above in claim 4. Balducci discloses both titanium-silicalites and beta zeolites, in powder form, have submicronic particles of <1 micron. Thus, it meets the limitation of powder having a mean diameter of less than 10 micron. Balducci further discloses that these materials are typically subjected to granulation processes, wherein the form and dimensions of the granules are dependent on various factors such as type of reactor, mass transport or heat phenomena limitations, or to control load losses of the catalytic bed [col. 1, lines 31-40]. It would have been obvious to one of ordinary skill in the art at the time of the invention to choose the instantly claimed mean diameter of <10 micron through process optimization, since the dimensions are made suitable according to reactor type, mass transport or heat phenomena limitations, or to control load losses of the catalytic bed.

### ***Double Patenting***

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thornton*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. **Claims 1-14** are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-13 of U.S. Patent No. 6,699,812 in view of Grosch et al. (DE 19623611). Present claims 1 and 14 differ from claim 1 of '812 in that they require preparation of epoxides compared to just catalyst preparation process. However, in view of Grosch, it would have been obvious to a person of ordinary skill in the art of epoxides to incorporate the epoxidation catalyst preparation process of '812 in process of making epoxides.

### ***Conclusion***

**Claims 1-14 are rejected.**



Art Unit: 1793

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Mueller et al. (WO 97/31711) discloses a process of making epoxides with titanium zeolite catalysts.

The rejections above rely on the references for all the teachings expressed in the text of the references and/or one of ordinary skill in the art would have reasonably understood from the texts. Only specific portions of the texts have been pointed out to emphasize certain aspects of the prior art, however, each reference as a whole should be reviewed in responding to the rejection, since other sections of the same reference and/or various combinations of the cited references may be relied on in future rejections in view of amendments.

Applicant is reminded to specifically point out the support for any amendments made to the disclosure. See 37 C.F.R. 1.121; 37 C.F.R. Part 41.37; and MPEP 714.02.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DEVANG PATEL whose telephone number is (571)270-3636. The examiner can normally be reached on Monday thru Thursday, 8:00 am to 5:30 pm, EST..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DP

/Jerry A Lorengo/

Supervisory Patent Examiner, Art Unit 1793